INSTALLATION & MAINTENANCE MANUAL FOR AID-O-MAID DUMBWAITERS

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The installation of this equipment is simple and can be done in less than 16 hours.

The proper time for installation is after all walls are built except walls where the doors are to be located. This includes sheetrocking, if required. The front walls - where doors are to be located - should be left out until equipment is in place. The bottom section of the dumbwaiter equipment normally includes bottom section of rails, machine with cab and controller. Shove this section into position with the guide rails against wall where studs are located. Allow a running clearance of 1½" between car sill and door sill. Note that edge of hoistway sill as shown in our layout shows the doors sill to extend 1" into hoistway.

Place a level on a straight section of guide rails and attach unistrut brackets to studs on wall with 5/16" by 2" lag bolts. Normally, a two stop dumbwaiter guide rails come in three sections. . For longer runs, guides may come in longer or more sections. . The guide rails are marked to indicate matching sections. Set second section onto bottom section and bolt thru unistrut to the guides with 3/8" by 1" bolts. Lag this section onto stud wall. Check joints for smooth connections and be sure bolts are tight. Set the third section with idler sprocket on top of second section, attach studs and bolt sections as before.

Unroll roller chain and place over idler sprocket. The end with the spring and eye bolt over back of idler sprocket and the regular end goes over front side to top of car frame. Using connector link, connect chain to end connector at top of car. Lift bottom of car and frame about four feet above floor and place 2x4 under car frame for blocking. Be sure car will not fall. Run spring end of chain, below gear box, under machine sprocket and up to bottom of car. The eye bolt fits into hole at bottom of car frame. The chain may seem short, but stretch spring until eye bolt fits into hole. Use wrench and screw top nuts on eye bolt until all threads are used. Tighten lock--be sure it is locked tight. Check chain to be sure it is straight and not twisted. The chain will stretch some during use. Actually the slack in all of the pins will indicate stretch. After dumbwaiter has operated 30-60 days, check chain to see if excess slack has developed.

After connecting dumbwaiter cord (if used) to plug or power supply, it will be possible to operate dumbwaiter by electric power. If plug is not yet activated, you can operate same with extension cord. At the bottom of control panel will be two main starter relays that operate the dumbwaiter in the up and down directions. Push the plunger at the bottom of the left relay in the up direction and the dumbwaiter car will run up -- push the plunger of the right relay up and the car will run down. Be sure not to run the car too far in either direction because it will stop or jam at the top of the hoistway or too far down or it will stop on rubber bumpers and stretch spring.

The top and bottom limits are mounted on unistrut that have wires rolled up which you may now unroll and stretch out to the control panel at bottom of hoistway. Leave slack at each switch to allow for adjustment of switches and attach wire to wall with plastic clamps provided. The wires for the top limit switch are to be wired to terminals 7 and 8. The wires for bottom switch are to be wired to terminals 6 and 8. On top of control panel is located a by pass button. By pressing this button, you will by pass or short the door and car gate switches, which are not yet connected. If you press this button and push up on plungers of either the up or down relays, dumbwaiter will operate automatically until you either release the button or the top or bottom limit switch is tripped. You should have already removed the 2x4 blocking.

At this time, you should cover the entire cab and machine to protect them from debris and paint, etc., until the front walls are built, including doors. Door panels will require a pull knob and a latching device (like a magnetic latch used on cabinet doors). Only single swing door panels are to be installed. Double swing door panels will not work on dumbwaiters nor are they allowed by Code.

After the walls at the door areas are built, you may begin wiring dumbwaiter. Take each of the ten stud terminal blocks and nail each on the inside of the hoistway near locking device area. Fig. III shows a right hand door with the push button located above the interlock area. If the job has right hand doors, the terminal block should be installed on the right hand side of the hoistway, but inside of the shaft and out of the way of the dumbwaiter car so that the car in movement will not strike any of the wires. Run the seven wire cable from the control panel to the first floor interlock and wire up the terminals. Install another terminal block at the top floor door. Run another seven wire cable from first to second floor block and wire up. Use wiring diagram and mark terminals of each block.

Install call and send stations with in-use light beside a wall stud above the door opening and nail or screw to stud. Run a three wire cable to terminal block to call and send station and wire to terminals C-1-2. Wire two wires from in-use light to terminal block.

At this time, after call and send stations are wired, you may press the by pass button on top of control panel and push an up button -- car should run until you release button or at the top limit travel. Be sure to keep clear of moving dumbwaiter car and be sure that car does not strike any object in hoistway. You can reverse the direction and the bottom limit switch will stop car. Adjust the top and bottom limit switches to allow car to stop approximately ¼" above finished sill. Switches may be adjusted either up or down on unistrut. Each time the car has been moved, there is a delay time of 3-5 seconds before it can be moved again by a call and send button. This is a protection device for the equipment.

The interlocks may appear to be difficult, but they are installed easily -- just follow the instructions carefully. Each interlock is marked either right or left hand with a black marking pencil. Remove cover and contact block from interlock. We normally install the bottom interlock first. Run dumbwaiter car up out of your way which is above top of door. Set the interlock near top of door jamb as shown in Fig. V. The lock has a long rod which must be cut off depending on thickness of the jamb, about 1" more than the thickness of jamb. Door stops are not necessary because the interlock can act as a stop. If a stop is in the way, cut out to fit the lock. Set lock about ½" from top of door frame with the front of lock 5/16" from strike point of door panel. Mark holes thru lock, drill pilot holes for screws and attach to door jamb. Run car down so that car misses rod. Attach roller arm to rod and set so that as the car comes into landing, the roller arm will retract forward and release latch device inside lock. There is a two inch angle on dumbwaiter car with a cut out section which allows more space for car to pass interlock rod without striking it. This angle is drilled to shift to opposite side if needed. Be sure that set screw and lock bolt on the roller arm unit is tight.

Insert the contact block and connect wires to terminal block. Be sure wires inside lock do not rub as the lock operates.

The next procedure is to mount keeper plate to door panel. The wider side of keeper goes toward the door jamb. With the dumbwaiter car at the landing with the interlock released, you can stand outside of door panel -- swing panel into closing position -- holding keeper plate with fingers and guide plate into interlock. After locating position for keeper in proper place, mark holes and mount. Door panel will need knob and device (like magnetic latch) to hold door in closed position. Repeat installing lock at floor above. At the top door panel, drill small pilot 1" below keeper plate which can be drilled out larger if the occasion ever arises to need to get into hoistway with special key.

If the door interlocks and the car gate are properly connected, close doors and gate and dumbwaiter should operate. Check to see if an open gate or open door stop dumbwaiter from operating. The interlocks and the gate switch in car should be in series and please be sure they are connected correctly for safety.

Suggested periodic inspection and maintenance to minimize downtime and increase unit lift, the following procedures are suggested.

1. Inspect for proper landing of car. Maintain within ¼-½" of landing.
2. Check for loose bolts and tighten, when necessary.
3. Check chain and spring under car for looseness. Keep tension on spring.
4. Inspect gate switch and door interlocks to be certain that dumbwaiter will not operate with any of these in open position.
5. Operate unit several times to insure proper operation from push buttons and check in-use lights.

Lubrication

Check gear box oil level. Change oil every five years with

SAE 90 oil.
Lubricate chain every year with a spray type chain lubricating oil.
Lubricate guide rails lightly with STP lubricant when unit is installed and every six months.
Replace roller chain and spring every 10-12 years.

Trouble Shooting Guide

1. Car does not move when button is pressed. Check to see if doors and car gate or gates are closed. Press by-pass button on top of control panel and press up or down button -- if car moves the door or gate circuit is open.
2. Car does not stop at hoistway opening properly. See if hoistway panel is maintained in closed position until car stops. Adjust limit switches.
3. Noisy operation -- car rubbing in hoistway.
4. Unit stop at undetermined locations. Obstruction in hoistway. Loose connections in terminal blocks or in control panel.
5. You can check out various circuits with OHM meter as shown on wiring diagrams. Disconnect power to control panel and remove cover. Replace cover to panel when finished. Reconnect power supply.

A three stop or more installation limit switches and middle switches will vary from a two stop installation. Check wiring diagrams for variations.

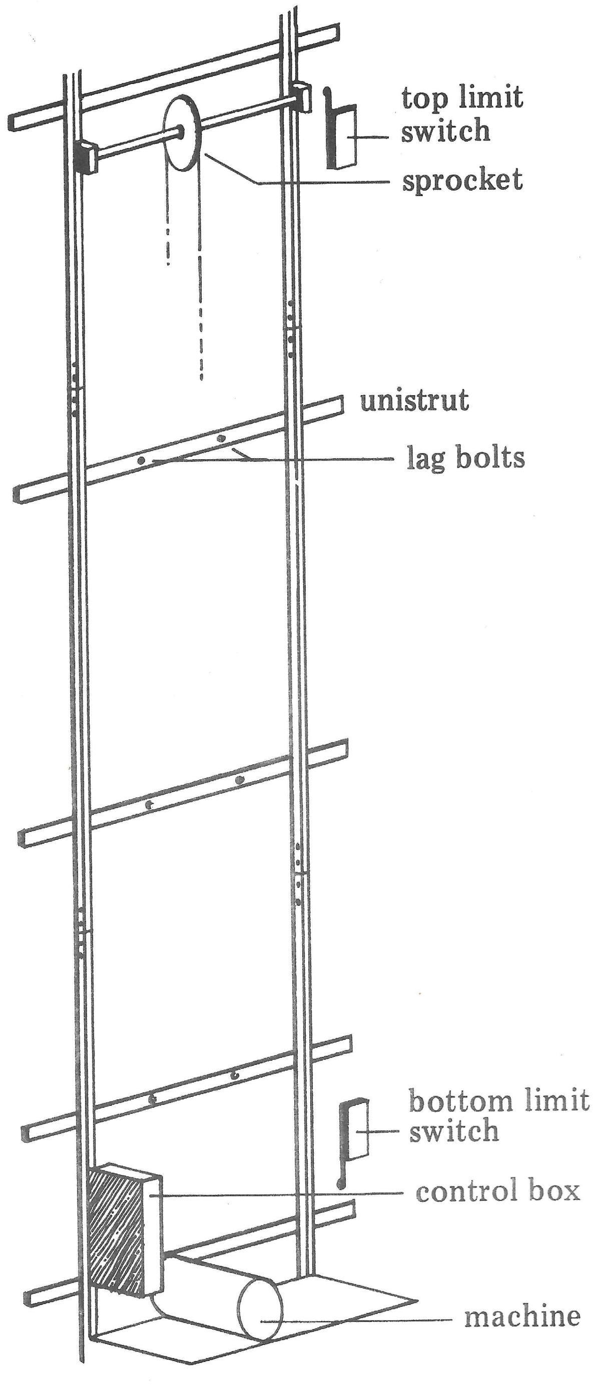
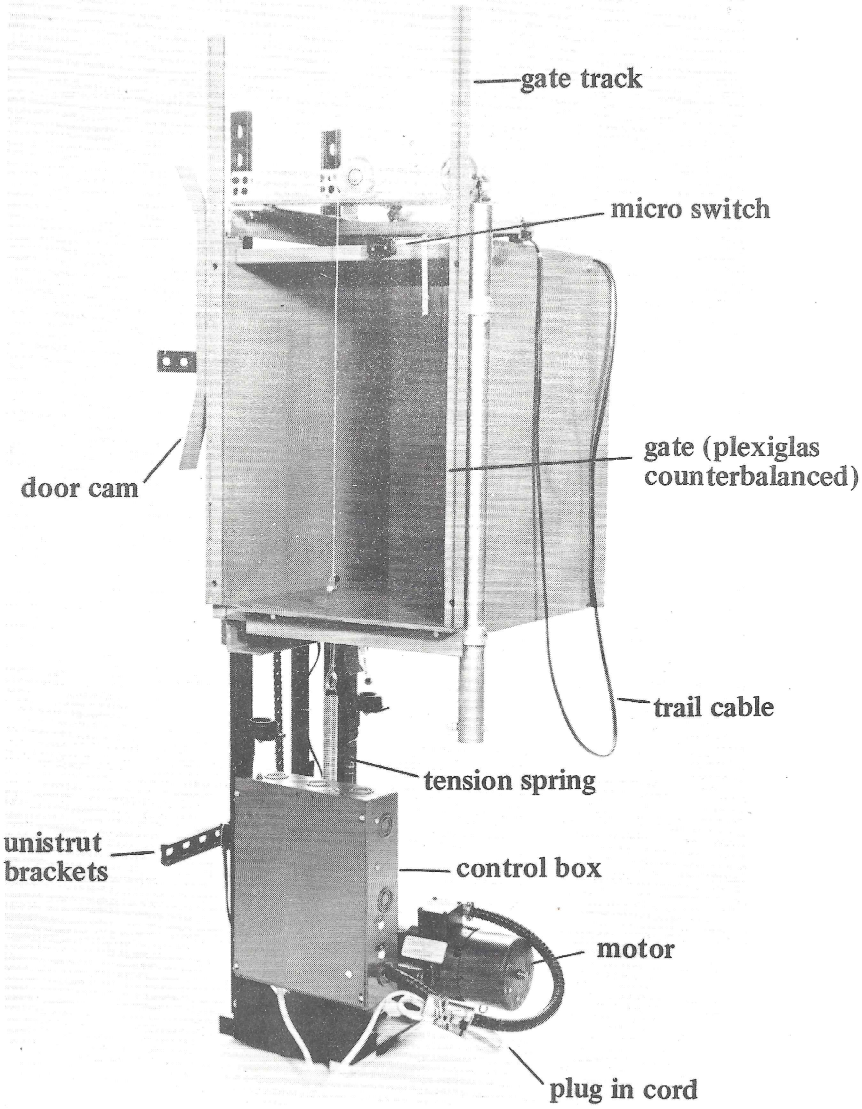

top limit switch
sprocket
unistrut
lag bolts
bottom limit switch
control box
machine

Fig. I

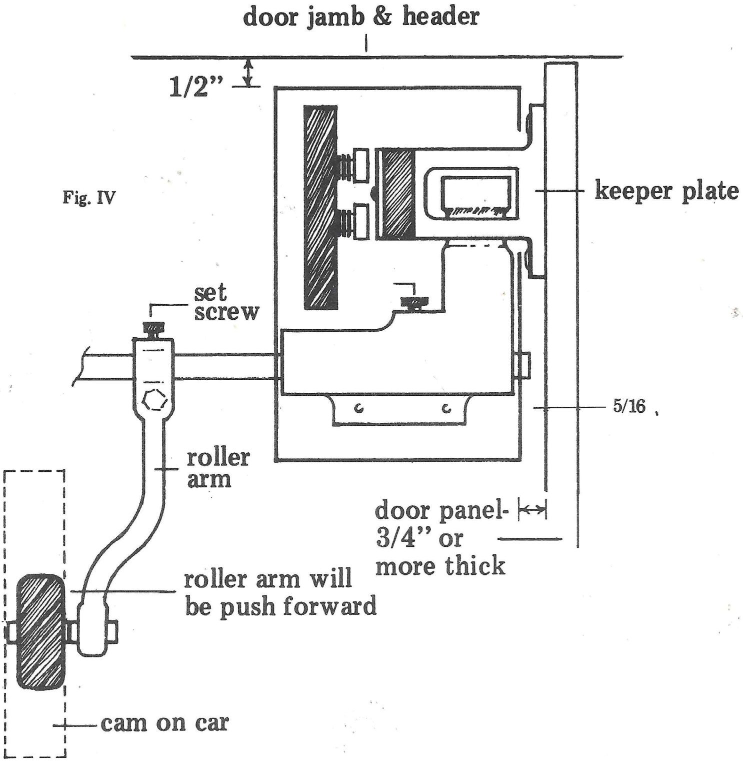


Car In Open Area

Fig. II

Interlock Mounting Right Hand Door

Fig. IV



Explanation of Figure II This shows our typical Aid-O-Maid # 2 dumbwaiter with a plexiglas gate, gate switch and trail cable for gate circuit. The dumbwaiter shown is for left hand swing doors showing the door release cam on the left side. Right hand operation will be opposite.

The standard Utility 100 lb. dumbwaiter does not have a car gate, gate switch or trail cable.

The light on top of control box indicates that power is on and serves no other function. The red button on top of control box by-passes the door circuit.

The two white buttons on side of control box will operate the car either up or down, while at the same time holding the by-pass button in a down position, provided the top and bottom limit switches are connected. We will normally connect the bottom limit switch and the top switch will need to be connected in the field.